

microorganism, wherein said related microorganism is a sub-type or isolate of *Lawsonia intracellularis*.

7. **(Amended three times)** A vaccine composition according to Claim 6, further comprising a further peptide or protein from *L. intracellularis* or a related microorganism, wherein said related microorganism is a sub-type or isolate of *Lawsonia intracellularis*.

8. **(Twice amended)** The vaccine composition according to claim 7, wherein the protein is a recombinant protein from *L. intracellularis* or a sub-type or isolate of *Lawsonia intracellularis*.

E2 9. **(Amended three times)** The vaccine composition according to Claim 7, further comprising a compound selected from the group consisting of: a protein, wherein said protein is a refolding protein, a heatshock protein, or the combination thereof, a flagellar basal body rod protein, an S-adenosylmethionine:tRNA ribosyltransferase-isomerase, an autolysin, an enoyl-(acyl-carrier-protein) reductase, and a glucarate transporter.

E3 12. **(Amended four times)** The vaccine composition of claim 10, wherein the polypeptide is encoded by a nucleic acid comprising SEQ ID NO:1.

32. **(Amended)** A method for vaccinating an animal against infection by *L. intracellularis* or a related microorganism or treating an animal infected by *L. intracellularis*, said method comprising the step of:

E4 administering to said animal an effective amount of an isolated immunogenic component of *L. intracellularis* or a related microorganism, wherein said related microorganism is an isolate or sub-type of *L. intracellularis* or other species of the genus *Lawsonia* for a time and under conditions sufficient to induce a protective immune response against *L. intracellularis* or said related microorganism.

37. **(Twice amended)** A method according to Claim 32, wherein said isolated immunogenic component comprises at least one of a peptide, protein, carbohydrate, lipid or nucleic acid molecule or a combination thereof from *L. intracellularis* or the related microorganism in an amount effective to induce a protective immune response against *L. intracellularis* or said related microorganism.

38. **(Twice amended)** The method according to Claim 37, wherein said isolated immunogenic component comprises a peptide or protein from *L. intracellularis*.

39. **(Twice amended)** The method according to claim 38, wherein the peptide or protein is in recombinant form.

40. **(Twice amended)** The method according to Claim 32, wherein the isolated immunogenic component is selected from the group consisting of: a protein, wherein said protein is a refolding protein, a heatshock protein, or the combination thereof, a flagellar basal

body rod protein, an S-adenosylmethionine, tRNA ribosyltransferase-isomerase, an autolysin, an enoyl-(acyl-carrier-protein) reductase, and a glucarate transporter.

43. (Twice amended) The method of claim 41, wherein the polypeptide is encoded by a nucleic acid comprising SEQ ID NO:1.

94. (Amended three times) A vaccine composition for administration to an animal comprising an immunogenically effective amount of a polypeptide comprising the sequence of SEQ ID NO: 2 and comprises an amino acid sequence encoded by a nucleic acid that hybridizes to the complement of a nucleotide comprising the sequence of SEQ ID NO: 1 under hybridization conditions comprising at least about 16% (v/v) formamide to at least about 30% (v/v) formamide and at least about 0.5M salt to at least about 0.9M salt at a temperature of 42°C, wherein said related microorganism is an isolate or sub-type of *L. intracellularis* or other species of the genus *Lawsonia*.

95. (Amended three times) A method of vaccinating an animal against infection by *L. intracellularis* or a related microorganism or treating an animal infected by *L. intracellularis* said method comprising the step of: administering to said animal an immunogenically effective amount of a polypeptide comprising the sequence of SEQ ID NO:2 or an amino acid sequence encoded by a nucleic acid that hybridizes to the complement of SEQ ID NO: 1 under hybridization conditions comprising at least about 16% (v/v) formamide to at least about 30% (v/v) formamide and at least about 0.5M salt to at least about 0.9M salt at a temperature of 42°C, wherein said related microorganism is an isolate or sub-type of *L. intracellularis* or other species of the genus *Lawsonia*.

108. (Amended) The vaccine composition of claim 10, wherein the animal is a pig.

114. (Amended) The vaccine composition of Claim 1, wherein said isolated immunogenic component further comprises a polypeptide selected from the group consisting of: SEQ ID NOS: 2, 4, 7, 9, 10, 12, 14, and 16.

REMARKS

Claims 1, 6-9, 12, 32, 37-40, 43, 94, 95, 108 and 114 have been amended to correct minor informalities and define the present invention. These amendments are supported within the specification as filed. Specific support for the term "isolated immunogenic component" is found, for example, on page 4, line 30 to page 5, line 13; support for the phrase "related organism is a sub-type or isolate of *Lawsonia intracellularis*" is found in the filed specification on page 3, lines 27-29; and support for the phrase "wherein said protein is a refolding protein, a heatshock protein, or the combination thereof," is found on page 6, lines 6-10. Thus, no new matter has been added herewith. The changes made to the claim by the current amendment,